Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 4 with the following rewritten paragraph:

Please replace the paragraph beginning on page 2, line 3 with the following rewritten paragraph:

Since they were it was invented in the early 1990s (Science, 251, 767, 1991), high density arrays formed by spatially addressable deposition of sensors on a two-dimensional solid support have has greatly enhanced and simplified the process of array based sensor technologies. The key to current microarray technologies is the placement of receptors at predetermined locations. The presence or absence of an analyte is then discerned by monitoring a specific location of a sensor array of receptors. All of these systems require preparing a sensor array with a plurality of receptors at predetermined locations and involve complex and expensive processing steps.

Please replace the paragraph beginning on page 8, line 11 with the following rewritten paragraph:

The present invention improves on two related technologies in the art: 1) the development of a polymeric bead- or microsphere-based sensor array in which <u>microspheres</u>, also termed beads, carrying different receptor molecules may be mixed together and still retains their identity, so that an analyst may determine the identity of the receptor molecules on each microsphere by using optically interrogatable encoding scheme; and 2) the development of a microarray comprising a support having a surface on which the polymeric beads are immobilized in a random or ordered pattern.

Please replace the paragraph beginning on page 14, line 14 with the following rewritten paragraph:

Microsphere based genosensory arrays have also been demonstrated. These are typically constructed by attaching a probe sequence to the microsphere surface (typically via NH₂ group). A fluorescent dye molecule, e.g., fluorescein, is attached to the target sequence, that is in solution. The optically interrogatable signal change occurs with the binding of target sequence to the microsphere. A few demonstrated probe and target sequences (see Ferguson, J. A. et al. *Nature Biotech.* 14, 1996). Alternatively, upon binding of the target sequences, an intercalating dye (for example, ethidium bromide) can be added subsequently to signal the presence of bound target to the probe sequence.